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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/588,396	06/06/2000	Richard F. Buckley	19546-020-(E-3915)	9558

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EXAMINER

TRAN, KHOA H

ART UNIT	PAPER NUMBER
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3634

DATE MAILED: 04/08/2003

19

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/588,396

Applicant(s)

BUCKLEY, RICHARD F.

Examiner

Khoi Tran

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
 Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 1/16/03 is: a) ☒ approved b) ☐ disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 14. 6) ☐ Other: _____

Drawings

The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on January 16, 2003 have been approved. New format sheets of drawings are now required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sibley ('230). Sibley ('230) discloses a silicon carbide semiconductor wafer carrier (70) including processes that require the use of high temperatures, see the Abstract and column 1, lines 8-11, column 2, lines 8-9, and column 3, lines 24-25. The semiconductor wafer boat (70) of Sibley comprising a plurality semiconductor wafers, (only one showed, see Figure 5), receiving in a plurality of slots position between first and second ends of the boat. The plurality of slots (75) on the wafer boat are located on the first (left side) and second (right side) upper supporting guides and on the lower arcuate grooved portion (74), see column 5, lines 48-50, wherein the bottom of the semiconductor wafer is in contact and supported by the slot on the lower arcuate grooved portion, and the at least one window (32) positions substantially in a small distance in from the distal end of the boat. The process of making the wafer boat is

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through a process of involving high heating through a suitable temperature. See columns 7 and 8. With respect to claims 3 and 13, to one of ordinary skill in the art, it would have been obvious that the silicon carbide would recrystallized itself to a normal state when place in a cooler environment after being removed from the high temperature environment. With respect to the dimensioning of the wafer and the angle of the wafer relatives to the boat, and the distance of the windows locate from the distal ends of the boat, it would have been an obvious matter of engineering design choice as determined through routine experimentation and optimization for one of ordinary skill in the art to routinely dimension the wafer to have a diameter of about 300mm and the thickness of 5mm, and dimension the radius angle from the center to the periphery edge of the wafer relatives to the upper supporting guides to be in ranges of 10-80 degrees, and dimension the distance in from the distal end to the window to be a minimum of about 10mm for a particular application, producing no new and unexpected results. With respect to claim 7, it would have been obvious to one of ordinary skill in the art as a matter of design choice to make duplication in part of the number of slots on the wafer boat in order to accompany the desire number of semiconductor wafers for a particular application thus producing no new matters. Note the applicant's drawings do not show the boat must support 25 wafers. Further, it is not the main inventive concept of the applicant to have a wafer boat design to hold only 25 wafers, see page 12, lines 19-20. With respect to the range of temperatures approximately between 1000 to 1400 degrees of Celsius, it should be noted, the patentability of the reciting structure, itself, that is to be determined and not how the product is to be constructed or the processes

of the product arrive, Sibley ('230) discloses the process of making the wafer boat through a high suitable temperature, i.e., 2000 degrees Celsius, see column 8, lines 31-32. Sibley ('230) does not specifically disclose the temperature is to be in ranges of between 1000 to 1400 degrees of Celsius. However, it is well established by case law that it is not inventive to discover the optimum or workable ranges where the general conditions are known in the art. Further, it is expected, as a part of the level of skill would routinely experiment to discover the optimum or workable ranges for a particular use. Accordingly, it would have been an obvious matter of engineering design choice, as determined through routine experimentation and optimization, for one of ordinary skill in the art to dimension the process temperature to be in ranges between 1000 to 1400 degrees Celsius, thus producing no new and unexpected results.

Response to Amendment

Applicant's arguments filed January 16, 2003 have been fully considered but they are not persuasive.

With respect to applicant's arguments that Sibley's windows or openings fail to increase radiation view factors and decrease radiation blocking of the wafers in the boat. The examiner respectfully disagrees. In this regard, it should be noted that the level of increase is not specified nor is the structure against which a comparison is made for determining whether or not an "increase" is present. Nevertheless, the inclusion of windows will inherently result in an increase of radiation view factors and a decrease of radiation blocking as compared to a structure with no windows.

Moreover, as previously stated, patentability determination of a claim is based on the patentability of the recited structure and not why such structure has been provided. The claims set forth the presence of windows and the prior art teaches the provision of windows. There is no requirement that the windows be provided for the exact same reason specified by the applicant and applicant has otherwise failed to show that the prior art does not inherently accomplish the recited function. It is applicant's position that a windowless wafer boat would have higher radiation view factors and less radiation blocking than the windowed wafer boat of Sibley ('230)?

It appears that applicant is relying on some extraneous source to impart to the claims limitations otherwise not present. However, such reliance is improper and ineffective to distinguish from the prior art.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

I hereby certify that this correspondence is being facsimile transmitted to the
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(Date)

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Type or printed name of person signing this certificate:

(Signature)

Furthermore, please do not separately mail the original or another copy unless required by the Patent and Trademark Office. Submission of the original response or a follow-up copy of the response after your response has been transmitted by facsimile will only cause further unnecessary delays in the processing of your application; duplicate responses where fees are charged to a deposit account may result in those fees being charged twice.

Khoa Tran

April 05, 2003



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